College Students’ Use of Marijuana: Antecedents and Consequences

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Overview

Prevalence of Marijuana (MJ) Use
Cognitive Factors in Marijuana Use
Negative Effects - Acute and Chronic
Changing Legal Context for Marijuana
Implications for College Populations
Policy
Prevention & Intervention
Young Adult Substance Use

**Past-Year Use of Various Drugs by 12th Graders (Percent)**

- Marijuana/Hashish
- Synthetic Marijuana
- Vicodin
- Adderall
- Salvia
- Tranquilizers
- Cough Medicine
- MDMA (Ecstasy)
- Hallucinogens
- OxyContin
- Sedatives
- Inhalants
- Cocaine (any form)
- Ritalin

*Source: University of Michigan, 2011 Monitoring the Future Study*
FIGURE 9.3a
Marijuana: Trends in Annual Prevalence among College Students vs. Others 1 to 4 Years beyond High School (Twelfth graders included for comparison.)

Marijuana: Trends in Annual Prevalence among Male vs. Female College Students.

Source: The Monitoring the Future study, the University of Michigan.
Note: Others refers to high school graduates one to four years beyond high school not currently enrolled full-time in college.
30-day Prevalence: MJ other Substances

**TABLE 8-4**

**Thirty-Day Prevalence of Daily** \(^{1}\) **Use for Various Types of Drugs, 2011:**

**Full-Time College Students vs. Others**

among Respondents 1 to 4 Years beyond High School, by Gender

(Entries are percentages.)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-Time</td>
<td>Others</td>
<td>Full-Time</td>
</tr>
<tr>
<td>____________</td>
<td>College</td>
<td>Others</td>
<td>College</td>
</tr>
<tr>
<td>Marijuana</td>
<td>4.7</td>
<td>9.4</td>
<td>8.0</td>
</tr>
<tr>
<td>Cocaine</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Amphetamines, Adjusted (^{1a})</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>3.8</td>
<td>4.9</td>
<td>6.2</td>
</tr>
<tr>
<td>5+ Drinks in a Row in Last 2 Weeks</td>
<td>36.1</td>
<td>31.6</td>
<td>43.4</td>
</tr>
<tr>
<td>Cigarettes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>7.3</td>
<td>21.2</td>
<td>6.8</td>
</tr>
<tr>
<td>1/2 Pack+/Day</td>
<td>2.5</td>
<td>12.4</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Approximate Weighted N = 1,230 720 480 310 750 410

Source. The Monitoring the Future study, the University of Michigan.

Notes. **\(^{1}\)** Indicates a prevalence rate of less than 0.05%.

See footnotes on the following page.
Past-Month Use of Cigarettes and Marijuana by 12th Graders, 1975–2011

Source: University of Michigan, 2011 Monitoring the Future Study
FIGURE 5-4a
Marijuana: Trends in 30-Day Prevalence and 30-Day Prevalence of Daily Use in Grades 8, 10, and 12

Marijuana (Annual)

Marijuana (Daily)

Source: The Monitoring the Future study, the University of Michigan.
FIGURE 5-5a
Marijuana: Trends in 30-Day Prevalence of Daily Use in Grade 12 by Total and by Gender

YEAR
PERCENT
0 5 10 15 20 25 30
YEARS: '75 '77 '79 '81 '83 '85 '87 '89 '91 '93 '95 '97 '99 '01 '03 '05 '07 '09 '11

Total

Male
Female
FIGURE 8-1a
Marijuana: Trends in Perceived Harmfulness in Grades 8, 10, and 12

12th Graders
FIGURE 8-4
Marijuana: Trends in Perceived Availability, Perceived Risk of Regular Use, and Prevalence of Use in Past 30 Days in Grade 12

Source: The Monitoring the Future study, the University of Michigan.
Marijuana Use Among Young Adults

Marijuana (MJ) prevalence is high
most commonly used illicit substance
first choice illicit drug

2010 MTF data - among 19 to 30 year olds
57% lifetime, 27.5% annual, 15.3% 30-day, 5.1% daily use

Gender - Typically more men use MJ than do women

Ethnic Background - MJ use varies based on survey
Generally similar levels of MJ use across ethnicity
Buffalo Sample of Regular MJ Users

- $N = 165$ young adults (age 18-30 years)
- 51% ($n = 84$) college students
- Use MJ at least 1x/week
## Demographic Characteristics: College Student MJ Users

<table>
<thead>
<tr>
<th></th>
<th>% or Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>European-American</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Minority</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Annual personal income &lt; $10,000</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Monthly dollars spent on MJ (Range: $20-$350)</td>
<td>136</td>
<td>97.6</td>
</tr>
<tr>
<td>Age (in years)</td>
<td>21.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Age began using MJ regularly</td>
<td>17.0</td>
<td>2.9</td>
</tr>
</tbody>
</table>
Methods of Using MJ

- Blunt: 32%
- Bowl or bong: 57%
- One-hitter: 9%
- Joint: 2%
Typical and Episodic MJ Use Among College Student MJ Users

- Typical weekly # joints [Questionnaire data]: 14.3
- # MJ use episodes/week [EMA data]: 6.3
- # joints/episode [EMA data]: 2.1
Cognitive Factors: MJ Expectancies

Beliefs about the Effects of MJ (Aarons et al., 2001)

Cognitive and Behavioral Impairment - slows thinking, drowsy
Relaxation and Tension Reduction - calm, escape problems
Social and Sexual Facilitation - happy, fun at parties
Perceptual and Cognitive Enhancement - more creative, euphoria
Global Negative Effects - lose control, depressed, angry
Craving and Physical Effects - hungry/munchies, giggly

Non Users report ↑ Cog/Beh impairment, Global Negative Effects & Craving/Physical
Frequent MJ Users report ↓ Cognitive and Behavioral Impairment
Quitters report ↑ Global Negative Effects, ↓ Social Facilitation
Cognitive Factors: Marijuana Use Motives

299 college students (Syracuse U) - 54% lifetime MJ use

Enhancement - get high, fun, pleasant, exciting
Conformity - to fit in/be liked, pressure from friends
Expansion - be more creative, expand awareness, know self
Coping - forget problems/worries, helps when depressed
Social - enjoy social events/parties, celebrate

Enhancement, Expansion, Coping and Social (sometimes)

Significantly predict MJ use, MJ problems, Negative affect, Anxiety, Anhedonia/depression symptoms
Marijuana Use Motives (contd.)

346 college students (Univ. of WA) - 100% past year MJ use

12 motives: Enjoyment, Conformity, Coping, Experimentation, Boredom, Alcohol, Celebration, Altered Perception, Social Anxiety, Relative Low Risk, Sleep/Rest, Availability

Experimentation - Curious about MJ
Boredom - Nothing better to do
Alcohol - Used MJ because drinking/drank
Social Anxiety - MJ relaxes when in unfamiliar/insecure situation
Relatively Low Risk - Safer than drinking alcohol/not dangerous
Sleep - Helps with sleeping/napping more enjoyable
Availability - MJ readily available/Get it for free

Enjoyment & Altered Perception ↑ MJ abuse/dependence
Experimentation ↓ MJ abuse/dependence
Marijuana Users Vary

Longitudinal Trajectories (Schulenberg et al., 2005)

Four waves (8 years) MtF data - 19,952 students - 18-24 years old

Chronic \((n = 919, 5\%)\) - Frequent (>3/month) MJ use all 4 waves
Decreased \((n = 1436, 7\%)\) - Frequent use Wave 1, no/some Wave 4
Increased \((n = 1001, 5\%)\) - No use Wave 1, frequent use Wave 4
Fling \((n = 1143, 6\%)\) - No/some MJ use Waves 1 & 4, frequent use Waves 2 &/or 3
Rare \((n = 5512, 28\%)\) - Some MJ use, but not frequent at any wave
Abstain \((n = 9337, 47\%)\) - No use during any wave
Remaining \((n = 555, 3\%)\) - Some use, but no consistent pattern
Consequences Related to Trajectories

**Chronic:** *Wave 1* = ↑men, European Americans, ↓grades, skipped school, worked > hrs, ↑time with friends, ↑social

*Wave 4* = ↓married, children, college grad, ↑unemployment, ↑social, dating

**Increased:** *Wave 1* = similar to Chronic

*Wave 4* = ↓education, employment, finances

**Decreased:** *Wave 1* = similar to Chronic

*Wave 4* = ↓friend’s use of MJ, drinking, risk taking,

↑marriage, children, well-being

**Rare:** *Wave 1* = some work, ↓social

*Wave 4* = financial independence, ↑social

**Abstain:** *Wave 1* = ↓European American, ↑grades, ↑religion

*Wave 4* = ↓risk taking, ↑married and children
Marijuana Users Vary (contd.)

Dependent - Non Dependent (Looby and Earleywine, 2007)
Internet Sample of 2,881 daily MJ users, mostly male (64%) and European American (87%), Mean age = 33 years, Median income = $20K to 30K

Dependent: Younger, ↓ education, > # joints/week, > MJ use/month, > alcohol/week & occasion, ↑ illicit drugs
↑ depression & respiratory problems
↓ happiness, life-satisfaction, motivation

Nondependent: Fewer problems in all areas
Acute Negative Effects of MJ Use

Physiological Changes

Increase in heart rate and blood pressure - dizziness

Cognitive Changes

↓ in attention, concentration, time perception, recall, recognition memory

↑ panic reactions and fear of losing control

Behavioral Changes

Slower reaction times (especially if combined with alcohol)

All contribute to DWI (drugged driving) - ↑ car crash injury with ↑ THC concentration and more frequent MJ use
Negative Effects of Chronic MJ Use

Chronic Health Effects (Brook et al., 2008)
Self-reports from community sample from Albany & Saratoga Counties
Followed from age 14 to 27 years
- Respiratory problems - shortness of breath, congestion
- General malaise - trouble sleeping, stomach problems
- Neurocognitive problems - trouble remembering, concentrating
- Lower academic achievement and functioning

Psychological Problems (Looby & Earleywine, 2007)
- MJ dependence (around 9% of MJ users meet dependence criteria)
- Depression (particularly if start MJ use at younger age)
Negative Effects of Chronic MJ Use

Withdrawal symptoms
- Physical - Headache, Shaky, Sweating, Stomach pains, Nausea
- Behavioral - Restlessness, Irritability

Miscellaneous
- Exacerbation of some psychotic symptoms/disorders
- Respiratory system - bronchitis, pneumonia
- Risk for exacerbating or developing cardiovascular disease
The Current Legal Environment

Federal laws criminalize possession and use of MJ

Medical MJ Laws exist in 18 states + DC

Medical uses - pain, nausea, glaucoma, appetite, movement disorders

- Eastern States: CT, DC, DE, ME, MD, NJ, RI, VT
- Middle States: MI
- Western States: AK, AZ, CA, CO, HA, MT, NV, NM, OR, WA

Nov. 2012 - MJ Legalization passed in CO & WA (no in OR)

- 21 ≥ years to possess, cultivate, transport for recreational use
- Government can regulate production and sale
- No public use or driving while impaired

New York ??? Gov. Cuomo supports decriminalization of MJ possession
Marijuana Policies

Federal and most States categorize MJ as an illicit substance
Even if legalized, difficult to manipulate prices and availability (WA proposing 25% tax)
Over time, prices likely will ↓ and availability ↑
Young adults at continuing risk for ↑ MJ use
Approaches to Secondary Prevention

Promote Positive Alternatives to MJ Use

- Physical Activity
- Relaxation

Environmental and Harm Reduction Approaches

- Regulate use in specific contexts (e.g., campus, driving)
- Accurate information about dose, positive and adverse effects
- Less risky modes of use (e.g., vaporizer)
- Regulate access (e.g., restrictions on age, amounts)

Comprehensive Approaches
Interventions for Marijuana Abuse

**MARIJUANA CHECK-UP**
Brief (2 session), assessment + personalized feedback
objective information about MJ and its effects

**Brief COUNSELING for MARIJUANA DEPENDENCE**

*A Manual for Treating Adults* (Marijuana Treatment Project SAMHSA)

9 sessions – 2 Motivation Interviewing + 7 Cog/Beh Skills


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Questions?